

## **REMARKS ON CLAIM AMENDMENTS**

### **REVIEW**

The current application sets forth Claims 1-23, of which claims 1, 8, 14, 17, and 20 are independent claim(s). Presently, no claims have been indicated as allowed.

Claims 1-7 and 14-23 are rejected under 35 U.S.C. §101 as not being patentable subject matter. Claim 5 was objected to for lack of antecedent basis. Claim 17 was objected to on the basis of a typographical error. Claims 1-13 and 17-23 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of U.S. Patent No. 6,757,623. Claims 14-16 stand rejected under 35 U.S.C. §101 as claiming the same invention as that of claims 13-15 of prior U.S. Patent No. 6,757,623.

### **A. 35 U.S.C. §101 REJECTION**

The rejection of Claims 1 – 7 and 14 – 23 based upon 35 U.S.C. §101 is in error. At the outset, the action utterly fails to establish a prima facie case of unpatentability as required by law. Indeed, the action fails to cite any cases that address statutory subject matter, and provides no analysis of the claims of the present application. The action merely concludes that the claims “fail to produce a useful, concrete and tangible result” claiming that “a result is not stored, displayed, or conveyed to the user.” The action does not provide the analysis or factual basis for the conclusion. As such, the Office has failed its burden of establishing a prima facie case of unpatentability. Furthermore, Claims 1 – 7 and 14 – 23 are well within legally recognized categories of patentable subject matter. The detailed action presents no evidence or analysis to the contrary.

1. Examiner's Prima Facie Case

Legal precedent and patent office guidelines are clear. The Office bears the burden of establishing a prima facie case of unpatentability. *See In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); "Interim Guidelines for Examination of Patent Applications for patent Subject Matter Eligibility", U.S. Pat. and Trademark Office Official Gazette Notices, 22 November 2005, at IV.D. (*available at* <http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm>). A legally cognizable prima facie case of unpatentability is established only upon the adducement of reasoning supported by evidence.

Examiner fails this initial burden when he or she fails to provide a factual basis for conclusions rendered in the action. The former C.C.P.A. articulated this requirement in the context of determining whether the Patent Office erred in rejecting an application based upon obviousness.

The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis. To the extent the Patent Office rulings are so supported, there is no basis for resolving doubts against their correctness. Likewise, we may not resolve doubts in favor of the Patent Office determination when there are deficiencies in the record as to the necessary factual bases supporting its legal conclusion . . .

*See In re Warner* 379 F.2d. 1011, 1017, 154 USPQ 173, 178 (C.C.P.A. 1967). This stricture has been followed time and again by the Board of Patent Appeals and Interferences in a variety of contexts. In the unpublished BPAI decision, *Ex Parte Toshinori Morizane*, Appeal No. 1999-

0461, 2001 WL 1922409 (Bd. Pat. App. & Interf. 2001), the Examiner had rejected claims directed to a method for making metal oxide micro-spherules under 35 U.S.C. §§ 101, and 112 as lacking utility arguing only that another reference directed to making silica gel plate provided evidence that the applicant's method could not work. The Board, however, found that the Examiner still "provided no evidence that if the appellant's claimed method rather than [the prior reference's method] is used, metal oxide micro-spherules cannot be formed . . ." *Id.* at \*2. Accordingly, the Board concluded that the Examiner failed to carry the burden of establishing a prima facie case of lack of utility and reversed the rejections. *See id.*

Another example is found in the unpublished decision of the Board in *Ex parte Bauchot, et al*, Appeal No. 2006-1617, 2006 WL 2610752 (Bd. Pat. App. & Interf. 2006) where the Applicants appealed a rejection of a claim under 35 U.S.C. §101 as claiming non-statutory subject matter. The independent claim was directed to a "method for processing one or a plurality of absolute cell references or cell range references . . . in a multi-dimensional spreadsheet." In rejecting Claim 2 as being non-statutory subject matter, the only reasoning offered by the Examiner was the unsupported conclusion that "the claimed invention was considered software per se in light of the specification." *Id.* at \*2. Because the Examiner failed to back up the conclusion with evidence, the Board found that "a prima facie case ha[d] not been established" and therefore, did not sustain the rejection.

It is abundantly clear that more than a recitation of a guideline followed by a conclusory statement is required to meet the Office's initial burden. *See e.g., Ex parte Chi*, Appeal No. 2006-0674, 2006 WL 2710992 (Bd. Pat. App. & Interf.) (rejection must rest on factual basis); *Ex parte Harrington*, Appeal No. 1999-0484, 2002 WL 1821719 (Bd. Pat. App. & Interf.) (the

Examiner failed to provide evidence that claims were anticipated under 35 U.S.C. §102); *Ex parte Corley*, Appeal No. 93-4332, 1993 WL 1454880 (Bd. Pat. App. & Interf.) (the Examiner failed to provide reasons why claims not enabled – “The Examiner does not satisfy his initial burden . . . simply by expressing doubt that the specification is not enabling”).

In the Detailed Action of the present matter, the following are the only statements relating to the patentability of Claims 1 – 7, 14 – 23: “Claims 1 – 7, 14 – 23 fail to produce a useful, concrete and tangible result. For example a result is not stored, displayed or conveyed to the user.” This statement is clearly inadequate to meet the Office’s burden of showing that the claims are not patentable under §101. It is simply a conclusion without any citation of facts or application of the facts to law. Under applicable legal precedent, and the Office’s own guidelines, the Detailed Action obviously fails to establish a *prima facie* case. Accordingly, it is respectfully submitted that Claims 1 – 7, 17 – 23 are in condition for allowance.<sup>1</sup> Withdrawal of the rejection is, therefore, requested.

The Official Gazette Notice dated November 22, 2005, entitled “Interim Guidelines for Examination of Patent Applications for Patent Subject matter Eligibility,” (the “Guidelines”), to which Applicant was referred in the Detailed Action on page 2, provides an acceptable procedure for determining whether claims are within the categories of statutory subject matter. First, the claims and the specification are studied to determine what the applicant claims to have invented. *See* the Guidelines, Section II. This step is further broken into three sub-steps: (1) identifying and understanding any “utility and/or practical application asserted for the invention;” (2)

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<sup>1</sup> Claims 14-16 have been cancelled and are therefore not addressed.

reviewing the detailed disclosure to understand what the applicant has invented; and (3) reviewing the claims to determine the scope of the claimed invention. *See* The Guidelines, Sec. III, A. – C.

The Detailed Action is unclear, but it seems to suggest that there is some uncertainty as to what Applicant claims as the utility of the invention. The Summary, paragraphs [0009] through [0020], of the instant application asserts that the system and the method performed by the invention analyze flow in a network. Looking only at the remaining independent claims subject to the rejection (Claim 14 has been cancelled), Claim 1 is directed to “a method for analyzing flow of a substance in a sewer network;” Claim 17 is directed to “a method of analyzing flow of a substance between a first location and a second location;” and Claim 20 is directed to “a method of analyzing flow of a substance in a sewer network.” The utility of the invention, therefore, is the analysis of flow in a network. Setting forth the purpose of the invention in the Summary and the respective preambles of the claims is sufficient to show utility of the invention. *See* MPEP 2107.02.<sup>2</sup> Thus, Applicant respectfully asserts that utility of the claimed invention is properly shown in the specification and claims. If the Office has reason to doubt the asserted utility, the Detailed Action has not set forth a *prima facie* case, again, including evidence, to the contest utility. *See id.* (“the PTO must do more than merely question operability.”) (quoting *In re Gaubert*, 524 F.2d 1222, 1224, 187 USPQ 664, 666 (C.C.P.A. 1975).

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<sup>2</sup> “[A] specification which contains a disclosure of utility which corresponds in scope to the subject matter sought to be patented must be taken as sufficient to satisfy the utility requirement for §101 for the entire claimed subject matter unless there is reason for one skilled in the art to question the objective truth of the statement or utility or its scope.” MPEP §2107.02 quoting *In re Langer*, 503 F.2d 1380, 1391, 183 USPQ 288, 297 (C.C.P.A. 1974) (emphasis supplied).

Returning to the Guidelines, the next step requires a review of the claims and to conduct a thorough prior art search. Afterward, the claimed invention is analyzed to determine whether it falls into the enumerated categories of patentable subject matter in 35 U.S.C. Sec. 101. *See* the Guidelines, IV. Section 101 provides: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.” 35 U.S.C. §101 (emphasis supplied). The Guidelines recite long-settled legal analysis which may be summarized as follows: the statute is intended to have a wide scope, and may only be limited in a few exceptional circumstances. *See* the Guidelines, IV.A. The analysis calls for determining whether the invention is within an enumerated category. The Office accomplishes this by analyzing the claims to assess whether they are directed to a machine, a process or an article of manufacture. “In many instances it is clear within which of the enumerated categories a claimed invention falls.” *Id.* at IV.B. Further,

a claimed invention may be a combination of devices that appear to be directed to a machine and one or more steps of the functions performed by the machine. Such instances of mixed attributes, although potentially confusing as to which category of patentable subject matter it belongs in, does not affect the analysis to be performed by the Examiner. Note that an apparatus claim with process steps is not classified as a “hybrid” claim; instead, it is simply an apparatus claim including functional limitations.

*Id.*, citing *R.A.C.C. Indus. v. Stun-Tech, Inc.*, 178 F.3d 1309 (Fed. Cir. 1998)(unpublished). If the Examiner does not believe that the claims fall into one of the four categories, he must explain why. “The burden is on the USPTO to set forth a prima facie case of unpatentability. Therefore if the Examiner determines that it is more likely than not that the claimed subject matter falls

outside all of the statutory categories, the Examiner must provide an explanation.” *See id.* In other words, the Examiner must explain why the claims are not directed to either a process, a machine, an article of manufacture or a composition of matter, to successfully establish a prima facie case.

In the present Detailed Action, there is no explanation whatsoever as to why the claims do not fall into one of the categories listed in 35 U.S.C. Sec. 101, i.e., there is no explanation as why the claims are not directed to a machine, or a process, or an article of manufacture. Since the Examiner has not provided the required explanation, the Office has not made a prima facie case of unpatentability, according to the Guidelines. As such, the rejection is improper.

The analysis then seeks to determine whether the claims are directed to exceptions to the broad scope of Section 101 created through case law. *See* the Guidelines, IV.C. These exceptions are limited and include only laws of nature, natural phenomena or abstract ideas (e.g., mathematical algorithms). *See id.*, citing *Diamond v. Diehr*, 450 U.S. 175, 185, 209 USPQ 1, 7 (1989). Again, the Detailed Action cites nothing that indicates whether the Office feels that the claims attempt to cover a law of nature, a natural phenomenon, or an abstract idea, nor is there any reasoning regarding this point.

Even if the Office did determine that claims were directed to such judicial exceptions, it must still determine whether the claims are directed to practical applications of such exceptions. *See* the Guidelines, IV.C.2. The test for whether a claimed invention is a practical application of a judicial exception set forth by the Guidelines is two fold. The Examiner is to determine whether the invention as claimed transforms an article to a different state. If so, the inquiry is done and the claimed invention is deemed to be eligible under Section 101. *See id.*, at IV.C.2.a.

Here, the Detailed Action contains no indication as to whether this step in the analysis was reached by the Examiner.

If there is no transformation, the Examiner must then determine if the invention “produces a useful, concrete, and tangible result.” In other words, if the claims are deemed to be directed to a judicial exception, they must somehow show an application of that exception (a law of nature, abstract idea or natural phenomenon) that produces a useful result. In the instant case, the Examiner has not indicated whether it is believed the claims attempt to cover a law of nature, an abstract idea, or a natural phenomenon, and, more importantly, the Examiner has not provided a factual basis for such a conclusion. The Detailed Action merely states that Claims 1 – 7 and 14 – 23 “fail to produce a useful, concrete and tangible result.” However, the Detailed Action omits analysis of the steps that might lead to that conclusion.

Finally, the Guidelines explicitly provide that in accordance with the Examiner’s burden, he must “identif[y] and explain in the record the basis for why a claim is for an abstract idea with no practical application” before the burden shifts to the applicant. The Guidelines, IV.D.

There is no indication that the Guidelines were adhered to in the examination of this application. According to applicable law, and the Office’s own rules and guidelines, the Examiner must provide evidence to support such conclusions. The Guidelines and applicable case law provide that there must be a determination of whether the claims fall within the broad statutory categories of 35 U.S.C. Section 101. If they do not, they are evaluated to determine whether ineligible subject matter is claimed. This ineligible subject matter is limited to natural phenomena, laws of nature, and abstract ideas. Then the analysis turns to whether the claim is an application of such ineligible subject matter. If it is determined to be an application of ineligible



subject matter, only then may the Office require that the application of the natural phenomena, law of nature, or abstract idea, must produce a tangible, useful result.<sup>3</sup> In this case, the Detailed Action sets out no analysis, no evidence, and no rule of law for the conclusion that the claimed invention is directed to ineligible subject matter that produces no tangible result. Since the conclusion is unsupported, the Examiner has not established a prima facie case of unpatentability. Accordingly, the rejection is due to be withdrawn and the claims allowed.

2. Claims 1 – 7 and 17 – 23 are directed to patentable subject matter

Analysis of the Claims in accordance with the Guidelines, applicable law, and the MPEP, leads to the conclusion that they are indeed patentable. The remaining pending Claims of the present application subject to the rejection may be divided into three sets. Claims 1 – 7 are directed to “a method of analyzing flow of a substance in a sewer network;” Claims 17 – 19 are directed to “a method of analyzing flow of a substance between a first location and second location;” and Claims 20 – 23 are directed to “a method of analyzing flow of a substance in a sewer network.” As shown above, 35 U.S.C. Section 101 provides that patents may be granted to inventions that are a process (i.e., a method), a machine, or a manufacture. Each of these sets of claims are within long-established categories of patentable subject matter.

a. *Claims 1 through 7.* Claim 1 is directed to a “a method of analyzing flow of a substance in a sewer network” and includes collecting separate data representative of flow velocities of a substance at separate locations and determining, by a processor, the travel time of

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<sup>3</sup> This assumes that the invention’s utility has already been established. There is nothing in the Detailed Action that questions the utility of being able to analyze flow in a network.

the substance between the locations. *See* Application Claim 1. Claim 1 properly recites a process (i.e., a method) under 35 U.S.C. § 101 and is therefore eligible subject matter. *See State Street*, 149 F.3d at 1374-5. In no way does Claim 1 attempt, as a whole, to cover a law of nature, natural phenomenon, or abstract idea, and so, the claim is not directed to any judicial exception to the broad realm covered by Sec. 101. As a result, it is unnecessary, according to the Guidelines, to determine whether the invention produces a tangible, useful result.

Assuming *arguendo* that Claim 1, as a whole, covers a judicial exception to the eligible subject matter (e.g., abstract idea), the steps of the claim still end in a useful result, namely generating a travel time of a substance between two locations. Again, if the Office deems that such a result is not tangible or useful, there is no factual evidence provided in the Detailed Action. Applicant, therefore, submits that Claim 1 and its dependent claims are directed to eligible subject matter and are patentable under 35 U.S.C. §101.

b. *Claims 17 – 19.* Independent Claim 17 is directed to “a method of analyzing flow of a substance between a first location and second location” and includes detecting flow velocities at separate locations, identifying a constant, and determining a transport time of a substance between the locations. *See* Application Claim 17. Claim 17 properly recites a process (i.e., a method) under 35 U.S.C. § 101 and is therefore eligible subject matter. *See State Street*, 149 F.3d at 1374-5. In no way does Claim 17 attempt, as a whole, to cover a law of nature, natural phenomenon, or abstract idea, and so, the claim is not directed to any judicial exception to the broad realm covered by Sec. 101. As a result, it is unnecessary, according to the Guidelines, to determine whether the invention produces a tangible, useful result.

Assuming *arguendo* that Claim 17, as a whole, covers a judicial exception to the eligible subject matter (e.g., abstract idea), the steps of the claim still end in a useful result, namely generating a travel time of a substance between two locations. Again, if the Office deems that such a result is not tangible or useful, there is no factual evidence provided in the Detailed Action. Applicant, therefore, submits that Claim 17 and its dependent claims are directed to eligible subject matter and are patentable under 35 U.S.C. §101.

c. *Claims 20 – 23.* Independent Claims 20 is directed to “a method of analyzing flow of a substance in a sewer network” and includes collecting, using flow meters, flow volume data, detecting flow velocity at upstream and downstream locations, identifying a constant corresponding to a relation between the upstream and downstream distributions, and determining a transport time. *See* Application, Claim 20. Claim 20 properly recites a process (i.e., a method) under 35 U.S.C. § 101 and is therefore eligible subject matter. *See State Street*, 149 F.3d at 1374-5. In no way does Claim 20 attempt, as a whole, to cover a law of nature, natural phenomenon, or abstract idea, and so, the claim is not directed to any judicial exception to the broad realm covered by Sec. 101. As a result, it is unnecessary, according to the Guidelines, to determine whether the invention produces a tangible, useful result.

Assuming *arguendo* that Claim 20, as a whole, covers a judicial exception to the eligible subject matter (e.g., abstract idea), the steps of the claim still end in a useful result, namely generating a travel time of a substance between two locations. Again, if the Office deems that such a result is not tangible or useful, there is no factual evidence provided in the Detailed Action. Applicant, therefore, submits that Claim 20 and its dependent claims are directed to eligible subject matter and are patentable under 35 U.S.C. §101.

## **B. Claim Objections**

Claim 5 has been amended to address the Examiner's objection for lack of antecedent basis by replacing "the first flow meter" with "a first flow meter" and replacing "the second flow meter" with "a second flow meter."

Claim 17 has been amended to address the Examiner's objection on the typographical error by replacing "form" with "from".

Claims 1 and 17 have also been amended to correct typographical errors. Claims 1 and 17 have been revised to replace "substrate" with "substance." It is clear from the context of the claim that "substance" was intended.

## **C. Double Patenting**

1. Claims 1-13 and 14-23 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of U.S. Patent No. 6,757,623. As discussed below, Claims 14-16 have been cancelled, rendering this rejection moot with respect to these claims. Applicant submits herewith a timely terminal disclaimer in compliance with 37 CFR 1.321 to overcome the rejection with respect to pending claims 1-13 and 17-23. Applicant also submits a 37 CFR 3.73(b) statement demonstrating that the present application is commonly owned with U.S. Patent No. 6,757,623. Applicant respectfully submits Claims 1-13 and 17-23 are now in position for allowance.


2. Claims 14-16 stand rejected under 35 U.S.C. §101 as claiming the same invention as that of claims 13-15 of prior U.S. Patent No. 6,757,623. Claims 14-16 have been canceled, rendering this rejection moot.

**CONCLUSION**

In view of the foregoing amendment(s) and comments, Applicants respectfully request withdrawal of the current ground(s) of rejection and objection, and the issuance of a formal Notice of Allowance. The Examiner is invited to telephone the undersigned at his convenience should only minor issues remain after consideration of this amendment in order to permit early resolution of the same.

Respectfully submitted,

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